

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE  
MASTER SYLLABUS

**COST ESTIMATING  
CET 2010**

**Class Hours: 3.0**

**Credit Hours: 3.0**

**Laboratory Hours: 0.0**

**Date Revised: Spring  
02**

**Catalog Course Description:**

The interpretation of building plans, preparation of quantity surveys dealing with individual sections of work, computation of labor costs, pricing of material costs, overhead, and profit.

**Entry Level Standards:**

Students entering this course should have a general familiarity with construction methods, materials, and terminology. A basic familiarity with architectural drawings will also be expected. This basic understanding may come from previous curriculum courses or from field experience. Math skills should be sufficient to allow manipulation of simple algebraic equations. Communication skills should be sufficient for the comprehension and presentation of technical data.

**Prerequisites:**

None

**Textbook(s) and Other Reference Materials Basic to the Course:**

Text:

*Fundamentals of Construction Estimating*, Pratt, Wadsworth Publishing Co.

Reference:

*Basic Construction and Materials Takeoff*, Rudyard A. Jones. University of Illinois.

*National Construction Estimator*, Craftsman Book Company.

*Walkers Building Estimator Reference*, Frank R. Walker. Walker Publishing Co.

Other:

- Scientific Calculator

- Paper - Pencil

**I. Week/Unit/Topic Basis:**

<b>Week</b>	<b>Topic</b>
1	Introduction
2	Types of Contracts and Estimates
3	Construction Drawings & Specifications
4	Excavation Quantities

5	Excavation Quantities EXAM 1
6	Concrete Quantities
7	Concrete Forms and Miscellaneous
8	Masonry Quantities EXAM 2
9	Structural Steel
10	Wood Frame
11	Roof Systems EXAM 3
12	Material Costs
13	Labor Costs
14	Overhead, Profit and Miscellaneous Costs
15	Final Bid Preparation
16	FINAL EXAM

## II. Course Objectives\*:

- A. Determine the types of materials, the construction methods, and the architectural concepts as presented in architectural drawings and specifications. II & IV
- B. Use the "CSI" specification format in the comprehension and presentation of quantity survey and cost-estimate data. (II & IV)
- C. Perform a quantity survey on a simple structure from a set of plans and specifications. II & IV
- D. Perform a simple cost estimate on labor and materials. II & IV
- E. Calculate indirect costs using various methods of allocating the individual cost to the project cost. II & IV

\*Roman numerals after course objectives reference goals of the CET program.

## III. Instructional Processes\*:

Students will:

1. Actively listen to class lectures and participate in class activities that develop and reinforce comprehension of the theories, concepts, principles and applications of distance measurement using surveying instruments. *Communication Outcome, Problem Solving & Decision Making Outcome, Active Learning Strategies*
2. Work individually and in teams to complete lab assignments related to the theories, concepts and principles covered in the lecture portion of the course.

*Communication Outcome, Problem Solving & Decision Making Outcome, Information Literacy Outcome, Active Learning Strategies*

3. Use EXCEL Spreadsheets, MC 2, WordPerfect/Word or other appropriate software to generate written home work assignments. *Communication Outcome, Problem Solving & Decision Making Outcome, Technological Literacy Outcome, Numerical Literacy Outcome, Information Literacy Outcome, Active Learning Strategies*

\*Strategies and outcomes listed after instructional processes reference Pellissippi State' s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

#### **IV. Expectations for Student Performance\*:**

Upon successful completion of this course, the student should be able to:

1. Interpret various types of architectural drawings. A
2. Explain the purpose of construction specifications. A
3. Explain the specific characteristics indicated by "plans". A
4. Explain the specific characteristics indicated by "elevations". A
5. Explain the specific characteristics indicated by "sections". A
6. Explain the specific characteristics indicated by "details". A
7. Explain the specific characteristics indicated by "schedules". A
8. Perform the methods of material takeoff sequencing. B
9. Calculate material quantities. C
10. Identify basic categories of material prices. D
11. Identify common material units used for pricing. D
12. Explain the factors affecting labor wages. D
13. Identify labor performance factors. D
14. Identify the types of overhead expenses. E
15. Calculate equipment depreciation costs. E
16. Calculate capital equipment costs. E
17. Identify the means of calculating rental equipment costs. E
18. Explain the concept of profit as a cost. E
19. Present construction material and processes data in the proper "CSI" format. A & B
20. Takeoff material quantities in the proper sequence. C

21. Accurately calculate material quantities. C
22. Properly price material. D
23. Properly calculate labor hours and price. D
24. Properly identify and price indirect costs. E
25. Apply appropriate profit margins. E
26. Properly complete a bid proposal form. E

\*Letters after performance expectations reference the course objectives listed above.

## **V. Evaluation:**

### A. Testing Procedures:

Four examinations are scheduled. They will be True/False, Multiple Choice, Matching, and Short Answer Essay. Each exam may be supplemented with a take-home exam which is primarily problem solving. Students may make up one exam due to absences. Examination will normally be given as scheduled. Should a student have a planned vacation, operation, etc. occur during a scheduled exam, every effort should be made to take the exam prior to the scheduled absence. When a student misses an exam due to illness, he must contact the instructor immediately upon return and make-up the exam within one week.

### B. Laboratory Expectations:

#### Quizzes:

Quizzes may be given by the instructor. Most quizzes will be unscheduled and randomly given. They cover the previous sessions material or the reading assignment for that day. There is no make-up or extra credit given for quizzes missed.

#### Written Assignments:

Students may be required to hand in answers to select questions at the end of each chapter or other appropriate homework at the instructor's discretion. All written assignments must be handed in on 8 x 11 engineering notepad, typing paper, lined paper with smooth edges or forms provided by your instructor. Students are encouraged to use word processing to generate their assignments.

All written assignments will be assessed a 10% penalty for each school day it is late. All student work submitted for evaluation may be retained by the instructor.

### C. Field Work:

N/A

### D. Other Evaluation Methods:

A subjective evaluation based on attendance, classroom participation and attitude may be included (10%).

### E. Grading Scale:

Final grades will be computed from the grades obtained on homework, quizzes and

examinations as follows:

Quizzes & Homework = 35% - 45%

Examinations = 55% - 65%

90 - 100 A

80 - 90 B

70 - 80 C

60 - 70 D

Below 60 F

## **VI. Policies:**

### **A. Attendance Policy:**

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course (Pellissippi State Catalog). Individual departments/programs/disciplines, with the approval of the vice president of Academic and Student Affairs, may have requirements that are more stringent.

It is the student's responsibility to attend every scheduled class activity on time.

Students are responsible to get assignments missed and to make-up any work missed during an absence

### **B. Academic Dishonesty:**

To use any form of unauthorized aid (notes, text, etc.) during a quiz or obtain any form of help from another student during testing is considered a form of cheating. Any time any form of cheating is observed the student will receive a 0 on that quiz or test.